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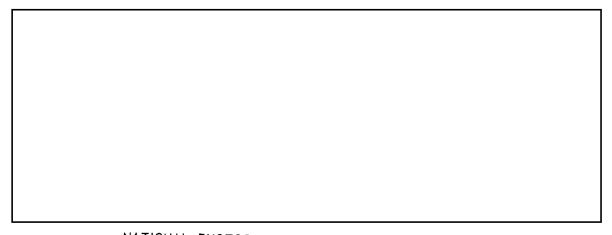
January 1965

# MEASUREMENTS OF MISSILE-READY BUILDINGS AT TYPE II SOVIET ICBM LAUNCH SITES

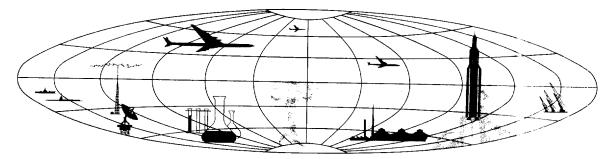




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### MEASUREMENTS OF MISSILE-READY BUILDINGS AT TYPE II SOVIET ICBM LAUNCH SITES

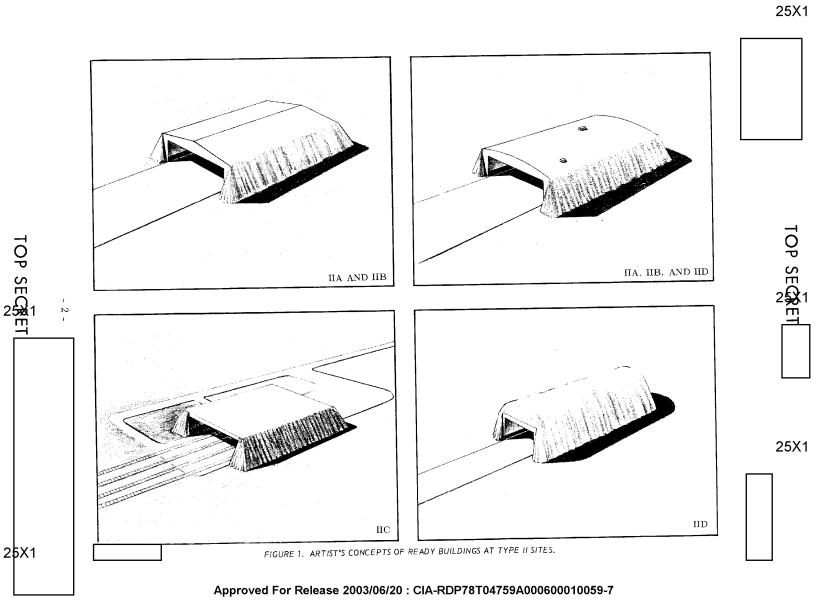
This report presents the results of a comprehensive machine analysis of measurements of missile-ready buildings derived from photography of all known Type II Soviet ICBM launch sites. The sites are listed alphabetically by complex in Table 1, showing the best possible measurements of the ready buildings, the photography from which they were derived, and qualifying remarks. shows artist's concepts of the types of missileready buildings.

All measurements were made on the most accurate equipment available, and all measurement points were repeated an average of 3 to 5 times on the best quality photography available to obtain the maximum accuracy possible. However, the photography from the earlier missions is generally of poor quality, making good mensuration difficult. The establishment of good measurement points is also difficult on even the best quality photography in that the earth covering, banking, or mounding of the ready buildings makes them difficult to dis-Exact measurements of the narrow ready buildings at a number of sites are almost impossible to determine.

Ready buildings are positioned to the right or left as seen from the rear of the site.

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Table 1. Dimensions of Missile-Ready Buildings at Type II Soviet ICBM Launch Sites

Complex/Site	Туре	Mission	Missile-Rea Right (ft)	ady Bldgs Left (ft)	Remarks
DROVYANAYA					
Launch Site A	IIB		170 x - 85	150 x 110	Earth-banked ready bldgs; photo quality good; dimensions fairly accurate
Launch Site C	IID		140 x 65	$170 \times 135$	Right bldg, earth mounded; left, earth-banked; photo quality poor
Launch Site D GLADKAYA	IID				Photo quality poor; dimensions cannot be determined
Launch Site A	IID		140 x 95	None	Ready bldg not earth covered; photo quality poor
			155 x 100	None	Ready bldg not earth covered; length indefinite
	IID		155 x 105	None	Ready bldg earth-banked; photo quality poor; length indefinite
Launch Site B	IID		155 x 40	None None	Ready bldg not earth covered; photo quality poor Ready bldg not earth covered; photo quality fair
			155 x 80 165 x 100	None None	Ready bldg earth banked; photo quality poor
ITATKA			100 x 100	None	totally bidg catter banked, photo quartey poor
Launch Site A	IIB		155 x 110	135 x 30	Right bldg, earth banked; left not earth covered; photo quality
					good for right bldg, poor for left
Launch Site B	IIB		170 x 105	None	Ready bldg earth banked; length indefinite
Launch Site C	IID		175 x 45	175 x 40 170 x 45	Earth-mounded ready bldgs; photo quality fair for right bldg, fair-to-good for left bldgs
KOSTROMA					
Launch Site A	IIB		160 x 105	160 x 85	Earth-banked ready bldgs; photo quality fair-to-good for right bldg good for left
Launch Site B	$_{ m IIB}$		155 x 70	170 x 90	1,
Launch Site C	$_{ m IIB}$		155 x 95	None	Earth-banked ready bldg; photo quality fair-to-good
Launch Site D	$_{\mathrm{IIB}}$		155 x 95	None	Earth-banked ready bldg; photo quality fair-to-good
Launch Site F	IID		160 x 105	145 x 35	Right bldg, earth banked; left, earth mounded; photo quality good for right bldg; poor for left
Launch Site G KOZELSK	IID		155 x 105	None	Earth-banked ready bldg; photo quality fair-to-good
Launch Site A	IIC		130 x 80	135 x 80	Earth-banked ready bldgs; photo quality fair
Launch Site B	ПC				Earth-banked ready bldgs; photo quality fair
Launch Site D NOVOSIBIRSK	IIC		145 x 85	145 x 85	Earth-banked ready bldgs; photo quality fair
Launch Site A	IIB		170 x 120	140 x 30	Right bldg, earth banked; left, arched bldg, not earth covered: photo quality fair
Launch Site D	IID		155 x 105	140 x 30	Right bldg, earth banked; left bldg, arched, not earth covered; photo quality fair
Launch Site E	IID		165 x 55		Earth-mounded ready bldgs; photo quality poor
PERM			100 x 55		
Launch Site A	IIB		None	160 x 125	Earth-banked ready bldg; photo quality fair
Launch Site B	IIB		155 x 105	None	Earth-banked ready bldg; photo quality fair
Launch Site C	IIB		None	155 x 115	* * * * * * * * * * * * * * * * * * * *
Launch Site D	IID		160 x 95		Ready bldg not earth covered; photo quality fair-to-good
Launch Site E	IID		140 x 40		Right bldg, earth mounded; left bldg 125 x 40, not earth covered; other left bldg, earth mounded; photo quality poor
PLESETSK					7.4 4 9.4
Launch Site A	ΠA		160 x 85	155 x 100	Ready bldgs not earth covered; photo quality good
Launch Site B	IIB				Earth-banked ready bldgs; photo quality fair
Launch Site D	$\Pi C$		140 x 120	130 x 100	Earth-banked ready bldgs; photo quality poor
Launch Site E	IIC	1	I		Earth-banked ready bldgs; photo quality fair-to-good

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Table 1 (Continued)

Complex 500	J.,	<b> </b>	Missile-Ready Bldgs				
Complex/Site	Type	Mission	Right (ft)		Le (f		Remarks
SVOBODNYY		•	<u> </u>				
Launch Site A	IIB		180 x 1	05	165 9	- 103	5 Posth hould deal at the
Launch Site B			105 v 1	シド	170 x	. 10	Earth-banked ready bldgs; lengths indefinite
Launch Site C			1.00 X L	ره ت	180 x	. 111	5 Earth-banked ready bldgs; lengths indefinite
Launch Site D			155 x	85			Right bldg, earth banked; left, earth mounded; photo quality good
Launch Site E	IID		180 x	70	180 x 200 x	70 70	for right bldg, poor for left  Earth-mounded ready bldgs; photo quality fair-to-good for right
Launch Site F	IID		180 x 1;	20			bldg, fair for left bldg 180 x 70, poor for other left bldg Right bldg, earth banked; left, earth mounded; lengths prob- inaccurate
Launch Site H	UD		160 x = 0	30	185 x 180 x	65 60	Earth-mounded ready bldgs; photo quality poor
TEYKOVO							
Launch Site A	ЦВ		170 x (	15	160 x	70	Right bldg, earth mounded; left, earth covered; photo quality for right bldg poor, for left fair-to-good
Launch Site B	IIB		150 x 19	20	170 x	85	Earth-banked ready bldgs; photo quality poor
Launch Site C	IIB		155 x 19 180 x 10	(()	Nor Nor	)C	Earth-banked ready bldg; photo quality good Earth-banked ready bldg; photo quality fair
Launch Site D	IID		None			50	Bldg 150 x 150, earth mounded; bldg 160 x 105, earth banked:
Launch Site E	HD		135 x 2 155 x 4	0			Ready bldgs not earth covered; photo quality poor
Laurah (Via 1)			1 ( 0 X 0	:)			Earth-mounded ready bldgs; photo quality fair
Launch Site F	IID		165 x 5 185 x 4	0 = 5	160 x	45	Earth-mounded ready bldgs; photo quality poor
ΓYUMEN							
Launch Site A	ИС		135 x 10	5	130 x	85	Earth-banked ready bldgs; photo quality poor for right bldg, fair for left bldg
Launch Site C	IIC		125 x 8 145 x 8	5 0	110 x 135 x	$\frac{85}{80}$	Ready bldgs not earth covered; photo quality fair Earth-banked ready bldgs; photo quality fair-to-good for right bldg:
/DDWHNWANA o							fair for left
ERKHNYAYA S Launch Site A							
Launch Site B	IIB						Earth-banked ready bldgs; photo quality fair-to-good for right bldg, poor for left
Launch Site C	IIA IIA						Ready bldgs not earth covered; photo quality good for right bldg; fair for left
Lauren Stee C	11/1		155 x 88	)	155 x	95	Ready bldgs not earth covered; photo quality fair-to-good
Launch Site D   11	IIB		155 x 80	, ,	F49 X T	.Oə	Ready bldgs not earth covered: photo quality fair
Treation type 17	ш		150 x 75	, ,	165 x 1 150 x 1	.10	Earth-banked ready bldgs; photo quality fair Earth-banked ready bldgs; photo quality good for right bldg. fair-
Launch Site E	нв		120 x - 80		7~ 1		co-good for left
1,			140 x 35		.75 x 1 75 x 1	35 15	Right bldg, earth banked; left, earth banked; photo quality fair
Launch Site H	IID		190 x - 55	1	95 x	en	for right bldg; length prob inaccurate for left
			$175 \times 40$		95 x	30	Earth-mounded ready bldgs; photo coverage poor
					60 x	40	Right bldg and left bldg 160 x 40, not earth covered; other left bldg, earth mounded; photo quality fair for right bldg and left bldg 160 x 40, poor for other left bldg
Launch Site I	HD		115 x 45	1	65 x 1	05	Right bldg, arched, not earth covered; left bldg, earth covered; photo quality fair for right bldg, poor for left

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Table 1. (Continued)

			Missile-Re		Remarks
Complex/Site	Type	Mission	Right (ft)	Left (ft)	IO-HIU KO
EDROVO	I				
Launch Site A	IIB				Right bldg, arched, not earth covered; left bldg, earth banked; photo quality fair for right bldg, fair-to-good for left Right bldg, arched, not earth covered; left bldg, earth banked;
			100 % 20		photo quality fair for right bldg, fair-to-good for left
Launch Site B	$\Pi B$		None	165 x 120	Earth-banked ready bldg; length prob inaccurate
Launch Site C	IID			155 x 50 200 x 60	Right bldg 120 x 45, arched, not earth covered; other 3 bldgs earth mounded; photo quality fair for right bldg 120 x 45, poor
r . b.dfr. D	IID		210 x 45	None	for others Earth-mounded ready bldgs; photo quality poor
Launch Site D	IID		$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	,vone	Paren-mounded ready maga; phono querry poss
			160 x 70		
Launch Site F	IID		145 x 55	165 x 60 165 x 65	Earth-mounded ready bldgs; photo quality poor
Launch Site G	IID		165 x - 65	180 x 55 155 x 65	Earth-mounded ready bldgs; photo quality poor
YOSHKAR-OLA					
Launch Site A	$_{\mathrm{IIB}}$		160 x 100	160 x 100	Earth-banked ready hldgs; photo quality poor
				160 x 95	Ready bldgs not earth covered; photo quality fair-to-good
Launch Site B	IIB		None	160 x 100	Earth-banked ready bldg; photo quality fair-to-good Earth-banked ready bldg; length accurate; width prob
Launch Site C	IIB		None		inaccurate
Launch Site D	IID		130 x 30		Right bldg, arched, not earth covered; left bldg, earth banked; length of right bldg, estimated; length of left indefinite
Launch Site E	IID		None	110 x 30 170 x 105	Bldg 110 x 30, arched, not earth covered; other bldg, earth banked photo quality poor for bldg 110 x 30, fair-to-good for other bldg
Launch Site F	IID		155 x 50	165 x 45 195 x 65	Earth-mounded ready bldgs; photo quality poor
			235 x 25		Ready bldgs not earth covered; photo quality fair
YURYA				-	
Launch Site A	$\Pi A$		150 x 85	145 x 105	Ready bldgs not earth covered; photo quality fair-to-good Ready bldgs not earth covered; photo quality fair-to-good
Launch Site B Launch Site C	HA HB		160 x 75 140 x 40	160 x 95   155 x 95	Right bldg, earth banked; left bldg, arched, not earth covered; photo quality fair-to-good for right bldg, fair for left
			155 x 120		Earth-banked ready bldg; photo quality fair
Launch Site D	ПВ	3		155 x 130	Left bldg, earth banked; photo quality fair; dimensions of right bldg cannot be determined
			150 x 35		Right bldg, arched, not earth covered; left bldg earth banked; photo quality fair
					6 Right bldg, arched, not earth covered; left bldg earth banked; photo quality fair
Launch Site F	` IIB				5 Right bldg, arched, not earth covered; left bldg, earth banked; photo quality fair
			135 x 3		Right bldg, arched, not earth covered; left bldg, earth banked; photo quality fair for right bldg, fair-to-good for left bldg
Launch Site H	H IID		155 x 4	5 155 x 3: 	5 Right bldg and left bldg 155 x 35, not earth covered; other left bldg, U.C; photo quality fair
			155 x - 5	5 170 x 6 200 x 8	0
Launch Site I	HE		None None	160 x 10 135 x 10	5 Ready bldg not earth covered; photo quality fair-to-good
Launch Site J	ı III		215 x 4	5 140 x 3	

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REFERENCES

PHOTOGRAPHY

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nissions, as shown in Table 1 Various

REQUIREMENT

CIA. C-RR4-81,807

NPIC PROJECT

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